5-1-2000

Haunted carnival

Yu Lin

Haunted Carnival

By

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Submitted in Partial Fulfilment of the Requirements for the Degree :
Master of Fine Arts

MFA Imaging Arts/Computer Animation
SCHOOL OF FILM AND ANIMATION
Rochester Institute of Technology
Rochester, New York
May 2000

Skip Battaglia, Chair
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Haunted Carnival

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---------- July 12 2001

Signature **Date**

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Haunted Carnival

It is my dream work to build a small amusement park in 3D animation. I got this idea was about two years ago when I finished my first movie (Fancy World). Unfortunately, I could not use this idea for my second movie, because I did not think one quarter was enough for me to build the whole set of the amusement park. Therefore, I decided to make it for my thesis. It took a year to produce, even though it is only a seven-minute movie.

Development of the story

The basic idea came quickly. The original idea is about two characters, Bambo and Tomato; they have an accident and lose each other. After the accident, Bambo finds himself in an unknown haunted carnival. When he tries to look for his partner in the haunted carnival, he experiences lots of spooky illusions. At the end, he figures out this spooky carnival is a graveyard. When I presented this idea to my committee chair, Skip Battaglia, he asked me several questions, "Why are these two characters together?" "Where are they going?" "What are they going to do?" and "What caused them to be separated?" So I began to think more about the beginning and the end of my story.

When I made my thesis proposal, the beginning of the story was changed to two pilots. They were flying to somewhere, because of bad weather; the lightning splintered their airplane, so they were separated. But, still, I did not solve the problems of "why they are together?" and "where are they going? " and "what they are going to do?" I simply thought these two characters were flying home. On their way home, they have an accident.

After the proposal, I started to do my 3D models; I had great time modeling the rides in my carnival. To design this little spooky carnival was so fun, I made a spider-web like ferris wheel, a scorpion–like merry go round, a mouse-like rollercoaster, pumpkin–like cable cars, and so on. After I finished all the modeling in my carnival, I started to design my two main characters. It took me almost two weeks to think about their appearances. These two characters' appearances must be distinct from each other. One has long and thin body, and the other one has short and round body. So I made Bamboo and Potato instead of Bambo and Tomato. I wanted their

names to match their appearances. Then it would be much easier for people to remember them.

I started my animation during fall quarter. This was my first time to use Maya. I had to make my movie and learn Maya at the same time. It took me longer to make my movie, but I had great fun learning another big 3D program. I did a lot of testing for animation. I wanted to animate the lightning, which splintered my characters' airplane. But I did not like it that much because I felt the whole background was empty. So, I changed the background to a galaxy. They are hit by meteorites instead of lightening. It took me almost a month to finish about one minute and forty seconds of animation, which was about my two characters flying somewhere in the galaxy, and they were hit by flaming meteorites, so their flying machine was on fire. One of my characters, Potato, is thrown from their flying machine. Bamboo tries to rescue him, but he fails because their flying machine is on fire and falls apart. They lose each other.

I presented this one minute and forty second animation to my committee member, Marla Schweppe; she gave a lot helpful suggestions of lighting and texturing for my models and pointed out some mistakes in my animation, which I could not have noticed by myself. When I showed my animation to Skip, he asked me same questions again, " Why they are together?" and "Where are they going and going to do? ". This time I really seriously thought about how to solve these problems.

Although I had the idea to change the beginning of my movie, I did not go back to remake it during winter quarter. Because it's more important to finish all my animation first. I started to animate the main part of my story about what happened to Bamboo in the carnival after they had the accident. It was not easy to do this part, because there were a lot of things going on in the carnival. I had to animate more than forty objects at the same time in my carnival, and that did not include animating lights. I showed my animation little by little once every two weeks to my committee. Marla suggested that I should use depth of field on my camera for some of my shots, so my character can stand out from the background. That turned out pretty good in my movie.

I made another character for my movie, Pumpkin. I felt like I needed a magician in the carnival. Pumpkin is the one who wakes Bamboo up and shows the illusions of the haunted carnival to Bamboo. I like this character a

lot, because this character helped me solve many problems in developing the story. Like a magician, Pumpkin makes the carnival appear, and in the end he makes it disappear again. He is also part of the rollercoaster because the path of the rollercoaster goes through the pumpkin's eyes and mouth, like the cave for the rollercoaster. I also added sixteen skeletons in the carnival. These sixteen skeletons are child's size; they are background characters on the rides in the haunted carnival. Each of their movements is different from the other. I added about twenty-two new shots to the movie after Pumpkin wakes Bamboo up. After Bamboo sees the movement of the whole carnival, he is so excited that he wants to join in. When Bamboo tries to walk closer to the carnival, he falls down because he trips over a rock making a loud sound. At this point all the movements and lighting in the carnival stop. All the rides stop, all skeletons stop moving, and all the lights turn dark. The plot returns to the original story; looking for his lost friend in the haunted carnival.

Like my original story, Potato shows up like a ghost in the haunted carnival, he appears somewhere on the ride and disappears when Bamboo tries to reach him. The last time Bamboo sees Potato and tries to reach him, Potato's head falls down and scares Bamboo away, but there was a problem. In my original storyboard, Potato had a body, but when I modeled him I only gave him a potato head with two arms and two legs. So Potato's head is also his body. I wanted Potato's head to fall down but the body still to stand there, so Bamboo would be scared away. Instead of making Potato's head fall, I chopped Potato's body into four pieces. So when Bamboo reaches him and tries to touch Potato from the back, Potato falls apart into four pieces on the ground.

After this shot in my original storyboard, Bamboo runs away from this spooky carnival. But when I designed the carnival, I built the carnival on an island. So Bamboo has nowhere to go. I added about twelve shots here. After Potato falls apart and disappears, all the lights turn darker, and Pumpkin starts to move again. This time Pumpkin makes all the skeletons move again. Like a magician, he makes all the skeletons fly into the air and line up in a spinning circle. Everything in the carnival disappears one by one, and then the spinning skeletons in the air disappear, too. After everything is gone, Pumpkin's eyes start glowing, and some evil skulls come out from his mouth. Bamboo runs away because those evil skulls chase him. When Bamboo reaches the edge of the cliff, he has nowhere to escape. An ocean stops him. This went back to the problem of where Bamboo should

go. This was almost the end of the winter quarter. I had done about four minutes and thirty-five seconds of animation in this quarter.

Before the next quarter started, I got several ideas on how to redo the beginning of my movie. Finally, I decided to get rid of what I did in fall quarter. I wanted to have a completely new beginning. I told my committee about my idea, and I agreed I would let them decide whether new one or old one is going to be used in my movie.

So I started to think about these two old questions again, " Why these two characters are together?" and "Where are they going and what they are going to do?" This time, I got the idea of two postmen, Bamboo and Potato; they are going to deliver a package to Pumpkin who lives in the graveyard. But next, I have to think about a new accident to cause these two characters to be separated. This gave me another headache. Before this, I had lightning and flaming meteors. Now I had to think about another solution. There is one more problem again. The background and scenes would have to be remodeled. Some people told me to just forget about the new idea of redoing the beginning of my movie, because this would take me longer to finish. Plus, I planned to screen my movie at the end of spring quarter.

I did not think too much. I started to model my new scenes immediately. Fortunately, it did not take me that much time to remodel the new scene. I remodeled Bamboo and Potato's flying object: a flying bicycle. For the new accident, my roommate gave me the funny idea; on their way to deliver the package, they hit a bird who was distracted to a female bird and did not notice Bamboo and Potato's flying machine coming.

So, I had finished the beginning part of my story. Now, I went back to the end. I had to save Bamboo from the evil skulls, and turn the carnival into a graveyard. I gave this job to Potato. When Bamboo has nowhere to go, he falls from the cliff. This time, Potato rides their flying bicycle and catches Bamboo in the air when Bamboo falls. Potato rides the flying bicycle to the top of the island; he stops there and throws the package to those evil skulls. Suddenly, all the evil skulls disappear, and fog appears and covers the whole island. After a while, the fog clears, and the graveyard appears in front of them. Bamboo is shocked and faint. Potato tries to wake his partner up by jumping on top of Bamboo, but he can not wake Bamboo up. So Potato gives up and takes Bamboo home.

I added three shots at the very beginning of the movie. I made the package go through a pipe before it falls into Bamboo and Potato's bike. I also added one close-up shot to show the post card on top of the package, which told the audience that this package is going to be delivered to Pumpkin who lives in the haunted graveyard. At the end I added a short animation in the credits showing Pumpkin opening the package and showing the strawberry in the package to the little skeletons.

I had done my movie finally. I realized having a good story is the most important thing for making a movie. If I had not needed to change my story again and again, I could have been done with my movie one quarter earlier.

Aesthetic of art

When I started to design my scenes, I was not thinking about building something realistically. I personally preferred the style of "Nightmare before Christmas". This movie influenced my movie. I like night scenes or dark backgrounds with colorful lighting because if you have a dark background, you could make it as either spooky or merry. "Nightmare before Christmas" gave me this idea. This is also the experience from the city I grew up, the shops and buildings in Taipei are brilliantly lit at night, and we have a gorgeous view of night scenes in Taipei. So, I paid a lot of attention to my lighting. I wanted to create an atmosphere to make people feel not only cheerful but also mysterious. Plus, the fairy–tale like design of the carnival with little skeletons playing inside does catch people's attention. Colorful lighting and models in the carnival also make the whole atmosphere lively.

Process

Character Development

I did not plan to make a realistic scenes and models for my movie. I like to make something more cartoon–like. There are four important characters I should mention:

Bamboo: he has a long and thin body with green color. Although Bamboo is not from the haunted carnival in my story, his awful appearance

and sensitive personality make me felt he is part of the haunted carnival. Especially when Bamboo was shocked by the haunted illusions in the carnival, his rich facial expressions seemed scarier than those haunted illusions.

In contrast, Potato has a round and short body with light brown color. He did not have much facial expression because he does not have a mouth, but his movement and eyes tell people what he thinks.

Pumpkin, the host of the haunted carnival, made the carnival appear and disappear. He also gave us surprise and horror.

Little skeletons, those characters help me to fill up the empty carnival. They also make the whole atmosphere haunted.

Modeling/ Textures and Color

Most of my models are organic shapes. Every model I made is based on the idea of nature. For instance, spider and web are combined as a Ferris wheel and flowers and ladybugs are combined as a spinning ride, and so on. Other examples of this are mice as the carts of rollercoaster, pumpkin as a cable car, potato, and Bamboo. I enjoyed using my imagination to combine them all together as a dream-like carnival.

Because I have a lot of objects in the carnival, I do not make heavy models. I use Nurb to model most of my characters, because it takes less memory to model most of organic shapes in my movie. Texture mapping helps to reduce the heavy work of modeling and also saves a lot of time for rendering. Projection maps and bump maps are very helpful tools. I used polygons to model some small background characters especially for non-organic shapes. For example, the tombs in the graveyard, I used polygon cubes, and smoothed the edges of those cubes, then applied projection maps on them. It turned out really good and did not take that much time for rendering.

When I chose my color, I preferred to use bright and rich color for my carnival. I wanted to create a cheerful atmosphere when people first see the carnival. I chose Blinn shaders because they made models shine. That is what a carnival was made to do: catch attention.

Lighting

Lighting plays an important role in my movie, too. In each scene I have different numbers of lights with different colors. Take the carnival scene as

example. Usually an ambient light lights the whole environment (it depends how bright your scene is supposed to be) and one huge yellow spot light on the top casts the shadows. The idea comes from sun. This way is better than to have several lights to catch shadows, because the directions of shadows might be different. Then I rendered one frame to see if it is necessary to add some lights to light up some dark edges. After that, I add some color point lights or spotlights to light up my background models. Different color and intensity will create different effects. Some lights for background models need to use light linking, in case those lights may also light up the places where I did not want to light.

There are three important things when I light my main character. First of all, if I have a dark background, I will increase the intensity of lights that are linked to the main characters, so, they can stand out from the background, but are not too bright for it. Second, all the lights linked to the main character should be parented to the joint of the main character, so those lights will flow wherever the main character goes. Third, sometimes if the shadow of the main character is vague or does not even show up in some places no matter what you do to the main spotlight (the one casting the whole scene's shadows). In that case, the character might look like it is floating on the ground. I will turn on the shadow of some lights linked to the main character, and make sure that spotlight has the same direction as the main spot light does.

Animating

Like doing my modeling, this is part I enjoyed a lot. Although I spent almost one quarter to learn how to animate in Maya, I learned this program is very convenient for animating. Before I started my animation, I was worrying that I had too many models in one scene and that because I had to animate more than forty objects at the same time. I thought I would have trouble animating them because it will be too heavy for the computer to run my animation. Things did not come out that badly. I tried to group everything together and scale down, so all the models fit into the grid. This helped a lot. The computer ran much faster than before, and it also made you feel easier to move the camera in Maya. If you build a scene or model that is a lot larger than the grid, you will have a hard time to animate the camera.

I did not have that many difficulties to animate my characters. I did have a lot of movements in the carnival, but most of movements were not complicated to animate. Like those rides in the carnival, I used motion

curves to animate them or keyframed them by rotation. About animating those little skeletons, I did not put any joint or IK handle for them, I just simple animated the models, because there are too many of them, if I assigned joints and IK handles for them, the computer would not be able to run my animation. Other characters like birds, Potato, or flying bicycle, I had fun to animate them.

When I animated Bamboo, I did not plan to make him move like a human. Because his body was combined by several sections of bamboo, I made him move like a puppet. The only thing bothered me was to animate Bamboo's turning and walking at the same time. Because the directions of arms' and legs' IK handles were not easy to control. So I had to keyframe the active and inactive IK handle option while I animated Bamboo's body, legs and arms at the same time. It took long time to do it and I had to be very careful to deal with them.

Special Effects

Most people think I used a lot of particle effects for my movie. Actually I did not. I only used two particle effects for my movie. One is the firework which came from Pumpkin's mouth, the other is the fire came out from the tail of the bicycle.

For the fireworks, I did not use the firework option in Maya, because it takes forever to render. Instead I used create fire option in Maya, and added my own texture to the fire particle. Then I animated the texture. So when the fire particle emitted, dots of my texture were moving, which made them look like a firework. I used the same method to do the particle for my bicycle.

For the fog, I used a point light to which I attached a cloud texture. I animated the texture again to make the fog move. I also animated the intensity of the point light, which let me adjust how heavy the fog supposed to be.

I also used a lot of shader glow and transparency maps to make my models appear and disappear. Most of neon light effects are shader glow. I did not put any light on them.

Rendering

This was the most tedious part of making my movie. It's not because my frames took forever to render, but because my render was terminated several

times in the night. Plus, there was one larger problem; sometimes it rendered one or two bad frames in my animation, so when I tried to import those frames to Avid or After Effects, it stopped importing after I had been waiting for 1 hour or more. To solve this, I was told to use After Effects to check frame by frame before I made quicktime movies or imported tiff sequences to the Avid. Unfortunately, it did not work again. Then something else very unusual happened, in After Effects, the program told me some of my frames were damaged, but in Photoshop, I had no problem opening them. Those frames are okay in PhotoShop. That means I have to save all my frames in PhotoShop again before importing them to Avid or making QuickTime movies. This wasted a lot of time.

So, I gave up. I tried another way to do it; every time I rendered, I used the Unix shell to check the size of my frames. If the size of certain frames was smaller or bigger than the average frame was supposed to be, I took them out and rendered them again. After that Jason Jarvis downloaded a small program called Graphic Converter for me, so I can bring all of my render frames and convert them as Tiff sequences again. Then I had no problem importing them to either After Effects or Avid.
This program saved a lot of people's time in our department.

Editing

After all the rendering problems were fixed, all I needed to do was import my Tiff sequences to the Avid machine and edit them together.
I like to import tiff sequences to Avid, because I can have better quality for my movie, but it took so long to import those huge files. Even if I got the Avid machine all night, I spent most of the time importing and only one or two hours editing. Therefore, I decided to make QuickTime movies before importing. Although I might loose a little bit of quality, I can save a lot of time for editing. I brought my Tiff sequences to After Effects again, and made QuickTime movies out of them. Also, I was told to choose media composer format for my QuickTime movies. It is the format specially made for the Avid machine. This format made smaller QuickTime movie files. I save a lot time for importing.

Skip helped me a lot with my editing. He told me where I should add shots and get rid of some unnecessary frames. Takeshi Takamoto helped me to check the speed of my animation, because I had been working on my movie for so long, sometimes I could not tell how fast or how slow for some parts of my animation were supposed to be. Editing is a much happier job than rendering or importing. I enjoyed it a lot, too.

Sound and Music

I made one copy of my movie for my composer, Neil Larson, an Eastman School of Music undergraduate. It was kind of hurried at that time because that was two weeks before screening. I put the time code on my movie, so it was easier for him to do his work. I asked him if he could make music suitable for Halloween, or cheerful carnival music. I told him I would do all the sound effects by myself. I found some sounds from the sound effect CDs, and also used a digital deck recorder to record sounds. Josh Gramse performed Bamboo' voice. This is something I cannot do by myself. That was really helpful.

Conclusion

From story, character development, modeling, lighting, animating, sound, editing and so on. I learned a lot. I want to thank Skip Battaglia. He helped me a lot for developing and editing my story. I want to thank Marla Schweppe; she helped me a lot for my lighting and animation. Also my third committee, Jame Jr. Ver Hague, gave me helpful suggestions for my movie, too. I also want to thank my dear SGI fellows, Hyun Ji Kim, George Zimmet, Ray Ng, Jason Donati , Sarah Donahue, Josh Gramse, and so on. I had so much fun working with them; I never felt I was alone to do my movie. I would like to give special thanks to Jason Jarvis, he encouraged and helped me a lot, and to my parents, thanks a lot for giving me the chance to study abroad. I had a great experience here and I will never forget it.

Appendix A: Thesis Proposal

Proposal for MFA Thesis Project

Haunted Carvinal

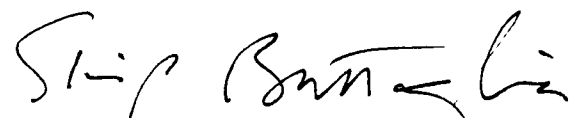
Yu Fang Lin

MFA Imaging Arts/Computer Animation

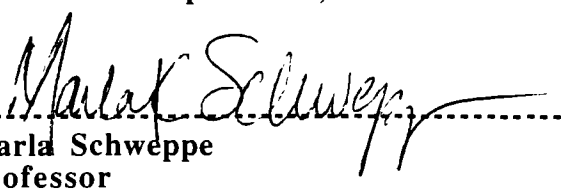
School of Photographic Art and Sciences
Rochester Institute of Technology

Rochester, New York

April, 1999

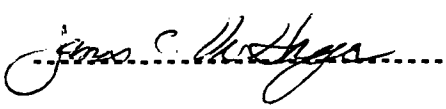


Skip Battaglia, Chairperson Professor
Film/VIdeo Department, School of Photographic Arts and Science



Marla Schweppe
Professor
Film/VIdeo Department, School of Photographic Arts and Science

Ver Hague, James Jr.
Professor
Interative Media Design and Image Department, School of Design



Haunted Carvinal Yu Fang Lin

Two pilots (Bambo & Tomato) were driving on airplane toward home. The weather was not nice; the sky was overcast, and the lightning leapt from cloud to cloud. Suddenly, the lightning splintered their airplaine. Bambo and Tomato rebounded from the airplaine. And airplaine fell and crashed into the desert.

Bambo woke up and found himself alone in the desert. He looked around but he did not find his friend (Tomato). He stood up, and looked around again. He sighted a light in the distance, and he ran toward it. He found there was a carnival. He walked into it, hoping that he could find some help. It was wired because there was no one here. But music was on, the teacup ride was spinning, roller coaster was running, ferris wheel was roating, and so on. Suddenly, he saw his friend Tomato sitting in the teacup. Bambo was very excited and ran toward teacup. All he wanted was to see that his friend was ok. Strange to say, when Bambo arrived teacup, Tomato had disappeared. Bambo was very confused,. He looked around again, and saw Tomato in ferris wheel. He cried out and shouted in order to get Tomato's attention. Unfortunately, there was no response from Tomato. Bambo ran toward it and took a ride of ferris wheel. When his ferris wheel cable car reached almost in the highest position, he was shocked to see that Tomato was in the car of the roller coaster. He got off the ferris wheel, and ran toward the roller coaster. He waited at the entrance of the rolle rcoaster. When the roller coaster arrived at the entrance, Bambo did not find his friend. He felt very frustrated and looked around again, and saw that his friend was standing at the entrance of the carnival.

This time he ran very hard, fearing that his friend would disappear again. He was so glad when he arrived at the entrance of the carnival, his friend was still there. Bambo tried to tounch Tomato's head from the back, Suddenly, Tomato's head fell off. Bambo was shocked and he ran out of the carnival.

He was so scared that he did not know what he was running toward. He reached the cliff, uncarefully fell off from it. He was falling and falling.It felt like there was no bottom or ground to stop. Suddenly, he heard the sound of explosion. He opened eyes immediately,and saw his airplane exploded and Tomato laying next to him. He woke Tomato up. They hugged and cried. After that, Bambo raised his head and tried to take a close look at Tomato. He was shocked to see that Tomato's head was growing bigger and bigger. Bambo tried to stand up and escape, but it was too late. Tomato opened his big mounth and swallowed bambo's head.

Market Plan

Yu Fang Lin

Asia Computer Animation Festival
Deadline for entering, Jan 30
Head office: 1631 F. Marina Court
San- Mateo, CA 94403, USA

Hiroshima International Animation Festival
office 4- 17 Kako- Machi
Naka- Ku, Hiroshima 730, Japan

Holland Animation Film Festival
Gerben Schermer
Hoogt 4, 3512 GW Utercht
The Netherlands
http://www.awn.com/haff

Animation Festival of Ottawa
Deadline for entering, July 1, 1999
TEL : 613-232-8769
Web Site: www.awn.com/safo
E-mail: safo@ottawa.com
The 1999 International Student Animation Festival
of Ottawa, 2 Daly Avenue, Ottwa, Ontario kin 6E2

Budget

Yu Fang Lin

Task	Projected	In - kind	Actural
Storyboard & Script	$ 600.00	$ 600.00	$ 20.00
Modeling	$ 8000.00	$ 8000.00	$ 0.00
Animation	$ 8000.00	$ 8000.00	$ 0.00
Rendering	$ 8000.00	$ 8000.00	$ 0.00
video editing	$ 1800.00	$ 1800.00	$ 0.00
Computer Time	$ 8000.00	$ 8000.00	$ 0.00
Sound Editing	$ 6000.00	$ 6000.00	$ 0.00
Music Composition	$ 1800.00	$ 1800.00	$ 120.00
Optical Disk	$ 200.00	$ 200.00	$ 180.00
SVHS Tape	$ 40.00	$ 40.00	$ 40.00
Total	$ 42440.00	$ 42440.00	$ 360.00

Timeline Yu Fang Lin

Summer (1 credit)

June Do: model all charcters
shader and texture mapping
lighting

July Do: lighting
background and environment
fix models, shaders, texture, lighting
start to animate 5 scenes
rendering

August DO: animate 12 scenes.
rendering
dump these 17 scenes to tape
(probably go home) music composing

Fall (5 credits)

September Do: animate 5 scenes
meet faculties weekly
rendering & dump flipbooks to tape
video editing

October Do: animate 10 scenes
meet faculties weekly
rendering & dump flipbooks to tape
video editing

November Do: animate 5 scenes
meet faculties weekly
rendering & dump flipbooks to tape
video editing

December Do: animate 5 scenes
meet faculties weekly
rendering & dump flipbooks to tape
video editing & sound effect editing

Winter (6 credits)

January Do: meet faculties weekly
fix animation, rerendering
video editing and sound editing

February Do: meet faculties weekly
fix animation, rerendering
video editing and sound editing

March Do: meet faculties weekly
fix animation, rerendering
video editing and sound editing
Done, backup movie, and make demo reels
Screening

April Do: paper works

Appendix B: Original StoryBoard

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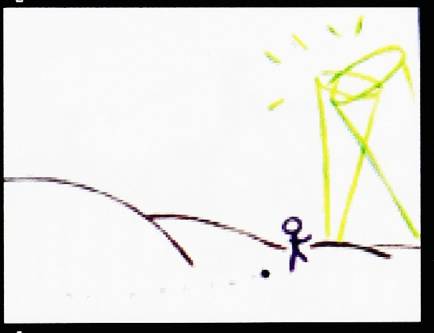

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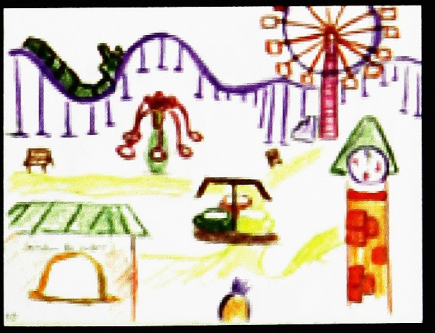

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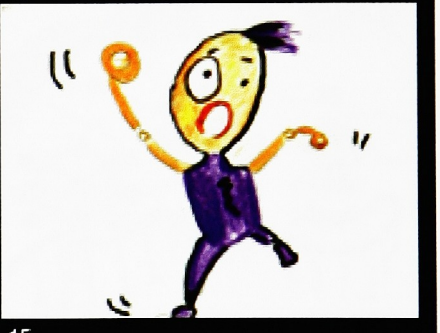

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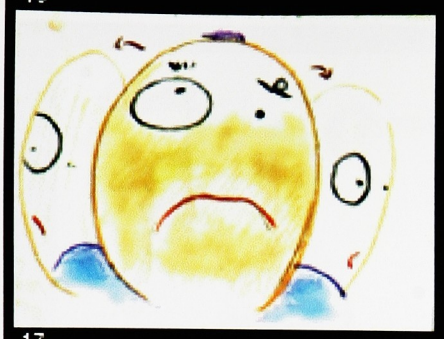

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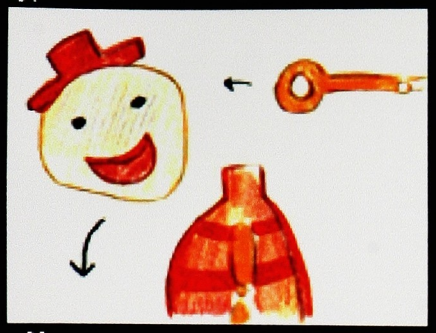

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Appendix C: Still Images of Haunted Carnival


Bamboo & Potato's
Mail service
Haunted Carnival